CLAIMS

The invention claimed is:

1. A method for modeling the performance of a system comprising computing software operating on computing hardware, the method comprising:

measuring a first system parameter of the system;

modeling the first system parameter as a non-linear curve;

measuring a second system parameter of the system; and

modeling the second system parameter as a non-linear curve.

2. The method for modeling the performance of a system of claim 1, wherein:

measuring a first system parameter of the system comprises testing the system; and

measuring a second system parameter of the system comprises testing the system.

3. The method for modeling the performance of a system of claim 1, wherein:

measuring a first system parameter of the system comprises measuring the first system parameter during system operation; and

measuring a second system parameter of the system comprises measuring the second system parameter during system operation.

4. The method for modeling the performance of a system of claim 1, the method further comprising:

defining a relationship between the first system parameter and the second system parameter.

5. The method for modeling the performance of a system of claim 4, the method further comprising:

displaying the curve modeling the first system parameter and the curve modeling the second system parameter on a single graph.

6. The method for modeling the performance of a system of claim 4, the method further comprising:

determining the distance between the curve modeling the first system parameter and the curve modeling the second system parameter.

7. A method for modeling the performance of a system comprising computing software operating on computing hardware, the method comprising:

testing the system's throughput using a first plurality of loads to obtain a plurality of throughput data points;

modeling the system's throughput as a function of load by fitting a non-linear curve to the plurality of throughput data points;

testing the system's response time using a second plurality of loads to obtain a plurality of response time data points; and

modeling the system's response time as a function of load by fitting a non-linear curve to the plurality of response time data points.

8. The method for modeling the performance of a system of claim 7, wherein modeling the system's throughput as a function of load by fitting a non-linear curve to the plurality of throughput data points comprises fitting a logarithmic curve to the plurality of throughput data points.

9. The method for modeling the performance of a system of claim 7, wherein modeling the system's response time as a function of load by fitting a non-linear curve to the plurality of response time data points comprises fitting an exponential curve to the plurality of response time data points.

10. The method for modeling the performance of a system of claim 7, wherein:

modeling the system's throughput as a function of load by fitting a non-linear curve to the plurality of throughput data points comprises fitting a logarithmic curve to the plurality of throughput data points; and

modeling the system's response time as a function of load by fitting a non-linear curve to the plurality of response time data points comprises fitting an exponential curve to the plurality of response time data points.

11. The method for modeling the performance of a system of claim 10, further comprising:

defining a maximum acceptable response time for the system;

determining the maximum system load using the exponential curve fit to the plurality of response time data points, the maximum system load being the load at which the maximum acceptable response time is reached; and

determining the maximum system throughput using the logarithmic curve fit to the plurality of throughput data points, the maximum system throughput being the throughput at the maximum system load.

12. The method for modeling the performance of a system of claim 10, further comprising:

defining a linear relationship between response time and throughput, such that a distance may be calculated between the logarithmic curve fit to the plurality of throughput data points and the exponential curve fit to the plurality of response time data points; and

calculating the distance between the curves by subtracting the exponential curve fit to the plurality of response time data points from the logarithmic curve fit to the plurality of throughput data points.

13. The method for modeling the performance of a system of claim 12, further comprising:

determining the optimal load as the load corresponding to the maximum distance between the curves.

14. A method for modeling the performance of a system comprising computer software operating on computer hardware, the method comprising:

measuring system throughput data points and system response time data points at predetermined times, each data point corresponding to a system load;

storing system throughput data points and system response time data points;

modeling system throughput as a function of load by fitting a non-linear curve to the stored system throughput data points; and

modeling system response time as a function of load by fitting a non-linear curve to the stored system response time data points.

15. The method for modeling the performance of a system of claim 14, wherein:

modeling system throughput as a function of load further comprises fitting a non-linear curve to the stored system throughput data points at predetermined times; and

modeling system response time as a function of load further comprises fitting a non-linear curve to the stored system response time data points at predetermined times.

16. The method for modeling the performance of a system of claim 15, wherein:

fitting a non-linear curve to the stored system throughput data points comprises fitting a logarithmic curve to the system throughput data points; and

fitting a non-linear curve to the stored system response time data points comprises fitting an exponential curve to the system response time data points.

17. The method for modeling the performance of a system of claim 16, further comprising:

defining a linear relationship between system response time and system throughput, such that a distance may be calculated by subtracting the value at a given load of the exponential curve fit to the plurality of response time data points from the value at that given load of the logarithmic curve fit to the plurality of throughput data points.

18. The method for modeling the performance of a system of claim 17, further comprising:

determining the optimal system load, the optimal system load being the load at which the distance between exponential curve fit to the plurality of response time data points and the logarithmic curve fit to the throughput data points is maximized;

defining a load range above the optimal load; and

issuing an alarm when the system load exceeds the load range.

19. The method for modeling the performance of a system of claim 16, further comprising:

defining a maximum acceptable response time for the system;

determining the maximum system load using the exponential curve fitted to the response time data points, the maximum system load being the load at which the maximum acceptable response time is reached; and

determining the maximum system throughout using the logarithmic curve fitted to the throughput data points, the maximum system throughput being the system throughput at the maximum system load.

20. The method for modeling the performance of a system of claim 19, further comprising:

issuing an alarm when the system load reaches the maximum system load.

21. The method for remodeling the performance of a system of claim 19, further comprising:

issuing an alarm when the system throughput reaches the maximum system throughput.

22. The method for modeling the performance of a system of claim 19, further comprising:

issuing an alarm when the system response time reaches the maximum acceptable response time for the system.

23. A computer readable media containing embodied thereon computer readable code for causing a computer to perform a method for modeling the performance of a system comprising computing software operating on computer hardware, the method comprising:

measuring a first system parameter of the system;

modeling the first system parameter as a non-linear curve;

measuring a second system parameter of the system; and

modeling the second system parameter as a non-linear curve.

24. The computer readable media of claim 23, wherein:

measuring a first system parameter of the system comprises testing the system; and

measuring a second system parameter of the system comprises testing the system.

25. The computer readable media of claim 24, wherein:

measuring a first system parameter of the system comprises measuring the first system parameter during system operation; and

measuring a second system parameter of the system comprises measuring the second system parameter during system operation.

26. The computer readable media of claim 23, wherein the method for modeling the performance of a system further comprises:

defining a relationship between the first system parameter and the second system parameter.

27. A computer readable media containing embodied thereon computer readable code for causing a computer to perform a method for modeling the performance of a system comprising computing software operating on computing hardware, the method comprising:

testing the system's throughput using a first plurality of loads to obtain a plurality of throughput data points;

modeling the system's throughput as a function of load by fitting a non-linear curve to the plurality of throughput data points;

testing the system's response time using a second plurality of loads to obtain a plurality of response time data points; and

modeling the system's response time as a function of load by fitting a non-linear curve to the plurality of response time data points.

28. The computer readable media of claim 27, wherein:

modeling the system's throughput as a function of load by fitting a non-linear curve to the plurality of throughput data points comprises fitting a logarithmic curve to the plurality of throughput data points; and

modeling the system's response time as a function of load by fitting a non-linear curve to the plurality of response time data points comprises fitting an exponential curve to the plurality of response time data points.

29. The computer readable media of claim 27, wherein the method for modeling the performance of a system further comprises:

defining a linear relationship between response time and throughput, such that a distance may be calculated between the logarithmic curve fit to the plurality of

throughput data points and the exponential curve fit to the plurality of response time data points; and

calculating the distance between the curves by subtracting the exponential curve fit to the plurality of response time data points from the logarithmic curve fit to the plurality of throughput data points.

30. The computer readable media of claim 29, wherein the method for modeling the performance of a system further comprises:

determining the optimal load as the load corresponding to the maximum distance between the curves.

31. A computer readable media containing embodied thereon computer readable code for causing a computer to perform a method for modeling the performance of a system comprising computing software operating on computing hardware, the method comprising:

measuring system throughput data points and system response time data points at predetermined times, each data point corresponding to a system load;

storing system throughput data points and system response time data points;

modeling system throughput as a function of load by fitting a non-linear curve to the stored system throughput data points; and

modeling system response time as a function of load by fitting a non-linear curve to the stored system response time data points.

32. The computer readable media of claim 31, wherein:

modeling system throughput as a function of load further comprises fitting a non-linear curve to the stored system throughput data points at predetermined times; and

modeling system response time as a function of load further comprises fitting a non-linear curve to the stored system response time data points at predetermined times.

33. The computer readable media of claim 32, wherein:

fitting a non-linear curve to the stored system throughput data points comprises fitting a logarithmic curve to the system throughput data points; and

fitting a non-linear curve to the stored system response time data points comprises fitting an exponential curve to the system response time data points.

34. The computer readable media of claim 33, wherein the method for modeling the performance of a system further comprises:

defining a linear relationship between system response time and system throughput, such that a distance may be calculated by subtracting the value at a given load of the exponential curve fit to the plurality of response time data points from the value at that given load of the logarithmic curve fit to the plurality of throughput data points.

35. The computer readable media of claim 34, wherein the method for modeling the performance of a system further comprises:

determining the optimal system load, the optimal system load being the load at which the distance between exponential curve fit to the plurality of response time data points and the logarithmic curve fit to the throughput data points is maximized;

defining a load range above the optimal load; and

issuing an alarm when the system load exceeds the load range.

36. The computer readable media of claim 35, wherein the method for modeling the performance of a system further comprises:

defining a maximum acceptable response time for the system;

determining the maximum system load using the exponential curve fitted to the response time data points, the maximum system load being the load at which the maximum acceptable response time is reached; and

determining the maximum system throughout using the logarithmic curve fitted to the throughput data points, the maximum system throughput being the system throughput at the maximum system load.

37. The computer readable media of claim 36, wherein the method for modeling the performance of a system further comprises:

issuing an alarm when the system load reaches the maximum system load.

38. The computer readable media of claim 36, wherein the method for modeling the performance of a system further comprises:

issuing an alarm when the system throughput reaches the maximum system throughput.